



OUT ON A LIMB!

Winter 2002-2003

Slow Spread spells success for Saskatchewan Dutch Elm Disease Program!

The 2002 Dutch elm disease (DED) season is at an end and while the disease continues to make its mark in the province, we are seeing that DED management activities are definitely slowing the spread of the problem. Without these efforts, DED would have likely spread across the entire province by now, taking with it nearly one billion dollars of urban American elms. In the world of DED, a slow spread of the disease definitely spells success!

As expected, we are seeing that the number of infections decrease or remain low in areas that are actively managing DED. For example, Estevan lost fewer trees this year than in the past several years, while Carnduff has lost the lowest number of trees in the nine years it has had DED. **A total of 565 elms were lost to DED** in surveyed communities and buffer zones in 2002 versus 641 trees removed in 2001, however there will be an additional 340 elms removed from the Condie Nature Refuge NW of Regina due to the poor condition of these trees.

The two main areas of concern in Saskatchewan are Lumsden and Regina. Lumsden had the highest removal numbers in the



Unfortunately DED has now been confirmed in the beautiful Rendek Elm Forest northeast of Hudson Bay. Photo courtesy Linda Moskalyk.

province (67 trees) and Regina had the highest tree loss in its history (14 trees). The numbers in Lumsden are not too surprising as there has been no capacity to deal with the disease in the natural areas around the town, therefore making it very difficult to control infections within the community itself. Regina's increase is likely due to the inadequate buffer zone that has to date been established for the city.

We were especially pleased to see that there were **no new outbreaks of the disease** in surveyed communities this year. Of particular note, several communities that had infections last year, namely Moose Jaw, Weyburn, Carlyle, Moosomin, and White City, were disease free in 2002. No infections have

re-appeared in Davidson since their first removal in 1999.

The areas that are not being represented in the above numbers are the natural areas and small communities where no organized sampling is occurring. For example, it was confirmed this year that a number of elms in the Rendek Elm Forest NE of Hudson Bay have DED. The extent of this infection is unknown, as it is in other natural areas. A number of new infections were also detected in areas like Wapella and Boundry Dam, but infections in many other unmonitored areas are no doubt being missed.

We need to keep up our efforts on as many fronts as possible in order that we can continue to see a slow spread of the disease.

Highlights of this Issue:

<i>President's Message</i>	2
<i>Feature Community: Wolseley</i>	2
<i>Executive Director's Report</i>	3
<i>Update on Regulations</i>	3
<i>Workshop Announcement</i>	3
<i>A Visit to the Rendek</i>	4
<i>Alberta DED Report</i>	5
<i>Tree Distribution Program</i>	5
<i>Sask Environment Report</i>	6
<i>Insect & Disease Report</i>	6
<i>DED in Manitoba</i>	7
<i>Membership Form</i>	7

President's Message

As the new president of the SDEDA, I am taking up the charge that was so well lead by outgoing president D'Arcy Schenk. Thanks to D'Arcy's leadership we are well on our way to dealing with many of the long-standing issues that we have been working on through the Association such as changes to the DED regulations and endorsements for elm pruners.

We are also about to release our new DED school curriculum province-wide. This will help bring DED awareness to a whole new group of Saskatchewan residents as students across the province embark on learning activities focused on DED and the urban forest. A big round of thanks goes out to everyone who helped with this project.

It is also rewarding to see that DED management is working in the areas where we are able to offer support. However, what is frustrating is that there is still not enough funding available to address the issue in a comprehensive fashion. There are still as many as 15 communities who qualify for cost-share funding that are not yet part of the program. We are also painfully aware that in many smaller communities DED management is virtually non-existent. We know of at least 42 communities that have had DED, but at this time do not receive any assistance to even remove and dispose of potential sources of the disease. We are doing all we can to address issues such as these.

Ray Morgan

Feature Community: Wolseley

The town of Wolseley located 100 km east of Regina, has since the threat of DED became imminent, taken steps to preserve and enhance its urban forest that consists of about 1000 American elms.

The first step taken in Wolseley was to chart and record the location of elm trees within the town. In following years I have continued to monitor these elms by casual observation plus a yearly walk up and down each street, alley, and avenue taking samples from suspect trees and recording the location of trees that require pruning or removal.

Since I write a weekly column for the Indian Head-Wolseley News, I occasionally use this column to try and educate citizens about the status of our elm trees. Once people learn to recognize an elm tree, become aware of disease symptoms, and understand pruning needs they can play a key role in maintaining the health of our urban elms.

Like humans, healthy trees are less susceptible to becoming infected. I recommend that pruning be done by a certified pruner, however in cases where people are going to prune their own trees I give them information on how to do it properly. Wolseley uses a certified tree pruner each year and ahead of his arrival, I list locations that require pruning.

To date we have had no infected trees in our town. The proper pruning done each fall has been a major factor in keeping our elms healthy and disease free. The town has not yet authorized any basal spraying. The main reason for this is that no elm bark beetles have been found in our beetle traps. Secondly, the controversy surrounding pesticide use keeps us from basal spraying as long as the town remains beetle free.



American elms outside the courthouse in Wolseley.

Each year the town plants a variety of tree species. We have planted conifers such as spruce, pine and fur. Deciduous species planted have included a variety of trees such as ash, basswood, aspen, and Russian olive. We are also seeing more residents planting fruit trees and ornamental shrubs.

Be good soldiers, keep up the fight and help win the war against DED.

W Beck—Town of Wolseley

Executive Director's Report

One of this year's most satisfying moments was at a trade show I attended where everyone seemed to know as much about DED as I did! It's exciting to see that the message seems to be getting through. However, there are still people I run across who seem to know nothing about the disease and it is this segment of the population that we are trying to target this year by attending a variety of less traditional trade shows along with our usual stops.

With the release of our 2002 report on the status of DED in Saskatchewan, we have also made an effort to reach elected officials in a more direct fashion through the mailing of our report to every MLA in the province, followed by direct meetings where we have representatives.

Our web site has also proven to be an effective tool for reaching, not only local residents, but also people from across North America. We have received inquiries from as far away as Wisconsin and California as it would appear that they have few local sources for DED information. If you haven't visited our web site lately (www.sdeda.ca) you should really check it out as we are constantly adding new information and resources to the site.

In the year to come we want to continue to expand the impact of our communication and education activities until we reach the point where everyone we talk to in the

province will be aware of DED and what they can do to help prevent the disease. It's a huge goal, but one well worth the effort.

Glenn Gustafson

Update on Changes to the DED Regulations

We were very pleased to see that the revised Forest Resources Management Act (FRMA) **was passed in July of 2002**. Along with other changes, the Act is now able to address the control of not only DED, but also the many other insect and disease threats expected to reach Saskatchewan in time. This proactive approach will mean that our province is much more capable of dealing with these threats before they become a crisis.

The Provincial Program Advisory Committee of the SDEDA has been actively working on the proposed wording for the revised DED regulations and is approaching the point where they can be submitted for final drafting and approval. The most challenging section has proven to be the requirement for endorsement of elm pruners as we want to make sure that it satisfies the needs of a diverse group of people while still accomplishing the goal of improving tree pruning.

Once the revised regulations are in place, the SDEDA will be entering an implementation phase that involves working with the various groups impacted by the changes to ensure that there is a smooth transition between the use of the old regulations and the new ones.

SDEDA Workshop in Moose Jaw for 2003

The SDEDA annual spring workshop and AGM will be held **on June 19, 2003 in Moose Jaw**. While the exact location for the classroom sessions has not been set, we are anticipating heading out to Buffalo Pound Provincial Park, just northeast of Moose Jaw, for our afternoon outdoor session and AGM. Due to the high incidence of DED in the park, we are pretty much guaranteed the opportunity to observe symptoms of the disease in the field.

For those of you who haven't been to Moose Jaw lately, you may also want to take in some of the attractions of this revitalized prairie city that offers everything from the intriguing "Tunnels of Moose Jaw" tours through to a world class spa.

We will be sending out a workshop registration package to members and interested tree care personnel in the spring. If you want more information, please contact our office to make sure you are on the mailing list.



Just one more example of the type of pruning we are hoping to prevent through endorsement of elm pruners.

A Visit to the Rendek Elm Forest

The Rendek Elm Forest is located just east of the town of Hudson Bay. The little 35 acre nature sanctuary is tucked in among the farms and woodlands bordering the Red Deer River of north-eastern Saskatchewan .

It feels quietly spiritual to stand there among the ferns looking up at the towering elms and listen to the chorus of bird life that exists there. It could be called Saskatchewan's little tropical secret. The majestic elms share this spot with northern ferns that thrive under the canopy and sometimes **stretch up to a height of five and six feet tall**. The abundance of plant and bird life is amazing. Some of the bird species that we identified were woodpeckers, sandhill cranes, American redstarts, warblers and goldfinch. The forest floor is home to mosses, bunchberry, raspberries and a large leafed plant that we think might be cow parsnip.

There is an area in these woods that is particularly interesting. As I entered that part of the forest the massive trunks at first glance reminded me of giant cottonwoods that grow along the rivers. A closer look confirmed that they are actually elms. The diameter of these trunks and the thick layer of soft mosses and hollow cavities at the base are signs of age, not disease. They are amazing. It is hard to be-

lieve that someday this little ecosystem might not exist as a unique native elm forest.

When we first arrived we were greeted at the entrance to the forest by one large elm that stood lifeless and naked against the dark green backdrop of the Rendek. As we walked into the forest a closer look revealed the true demise of this habitat. The nature trail led past a rather large grouping of elm that all had considerable dieback. Yellow, wilting leaves confirmed the symptoms of Dutch elm disease. The close proximity of these infected trees seems to indicate the ease with which the disease can spread to neighbouring elm. If you stand along the banks of the Red Deer River, dead or dying elm can be seen sticking out in an obvious pose from the rest of the forest. As the elm disappear the habitat will change and a new look will emerge.

A resident who lives across the river informed us that the Rendek forest was the site of a Hudson's Bay Company trading post many years ago. Artifacts from the area have been discovered and collected. I talked later with Alex Rendek, the original owner of the property. He remembers back in the 40's and 50's when the site was used for gatherings and picnics by neighbours in the community. With all its history and the amazing natural habitat of this area, we hope the forest can withstand the disease by regenerating with new species and even with younger more resilient elm. I guess only time will tell.



One of several lifeless elms visible to visitors at the Rendek Elm Forest. Photo courtesy Linda Moskalyk.



Ostrich ferns can grow up to six feet tall in the shadow of the Rendek elms. Photo courtesy Linda Moskalyk.

Did You Know?

Early settlers left large elms standing when they homesteaded because they were too hard to split or chop down.



It was said that when elm leaves curled they foretold rain.

Elm was often used for making caskets, which associated the tree with death in folklore.

Linda Moskalyk
SOS Elms Coalition

Alberta DED Prevention Program Report - 2002

As mentioned in the spring edition of "Out on a Limb", Alberta's DED prevention program was almost cut. During the recent restructuring of Alberta Agriculture, Food and Rural Development (AAFRD), Industry Development Sector (IDS), it was felt that this program was not within the IDS mandate. Through tremendous support from STOPDED, SDEDA, Western Canadian DED Coalition, City of Winnipeg and MLA's across the province, the decision to cut the program was reevaluated. AAFRD agreed to retain the program until April 2003. It was hoped at that time, that AAFRD could form funding partnerships with other ministries that would be affected if DED were to establish itself in Alberta.

All sample results in 2002 have turned out negative for the presence of DED . . .

In 2002 beetle monitoring traps were placed throughout the province. The number of beetles trapped and the number of municipalities in the province finding beetles is substantially lower than in previous years. Firewood, in large volumes, was also confiscated at the Alberta-Montana ports of entry.

All sample results in 2002 have turned out negative for the presence of DED, however Dothiorella wilt remains a concern for the City of Edmonton. Altogether, more than 200 cases of Dothiorella wilt have been confirmed in Edmonton since 1996. To date, 74 of these have resulted in tree removal.

The continued drought in southeast, northeast and central Alberta, has caused significant stress on American elms. In general, elm trees have shown good drought tolerance compared to other tree species. Red elm weevil continues to cause damage to the elms, mainly in Lethbridge, although more areas are reporting damage from this weevil. Cases of leaf miner damage, hard-shell scale and fall cankerworm have also been reported.

DED Public Awareness Week was recognized throughout the province during the week of June 24th – June 28th. For more information check our website at: <http://www.agric.gov.ab.ca/navigation/pests/trees/index.html>

*Janet Feddes-Calpas
DED Program Coordinator*

Tree Distribution Program Much Appreciated in Communities

The Saskatchewan Urban Forest Diversification Program (SUFDP) distributed a total of 510 trees to 19 very appreciative communities across the province in September. This Tree Canada Foundation program, organized by Murray Little, is in its third year of operation and has over this time period distributed 7,200 trees to Saskatchewan communities that have either had DED or are threatened with DED.

Because of limited funding, the 2002 program was only available to communities that have had DED. The number of trees allocated to each community was dependant on the number of elms they had lost. The tree stock distributed in the program was in 7 gallon containers with most of the trees being between 6 to 8 feet tall. It is felt that larger, containerized stock is more likely to survive and will fill in gaps in the urban forest more quickly. It's like having an instant forest appear overnight.

The aim of the program is to diversify urban forests in order that species specific diseases like DED will have less of an impact in the future. To accomplish this goal eight different species were distributed this year namely: ash, cherry, crabapple, linden, maple, mountain ash, oak and silver maple. Stock was allocated in a ratio of 1/3 ash, 1/3 larger tree species, and 1/3 smaller ornamental species.

As in other years, the SDEDA assisted in the program through providing information packages to each of the participating communities. These packages consisted of tree planting information, DED awareness materials, as well as a "Tree Care Pledge" that the community was asked to sign. The pledge is based on maintaining trees received in the program for a three year period.

The main funding for this program has come through TransCanada Pipelines, however as this group will not be funding the program next year, efforts will be made to seek an alternate sponsor.

Many thanks to Murray Little for his hard work on behalf of the urban forests of Saskatchewan. Also thanks to the Town of Moosomin who provided space and staff time in 2002.



Trees awaiting distribution in Moosomin - September 2002. Photo courtesy Murray Little

Saskatchewan Environment Report

The provincial DED program continues to use a multi-faceted approach to dealing with the disease in Saskatchewan as the following summary indicates:

- Surveillance for DED symptoms occurred twice in each of 43 communities over the summer through a contract with BioForest Technologies Inc.
- A total of 33 communities were part of the 2002 cost-share program. The newest participant, Regina Beach, had an elm inventory done as part of the program. Tisdale also had an inventory of elms done north of town, while Regina completed inventory work north-west of the city. SE also did inventories of Emerald City, White City and Pilot Butte.

- Approximately 360 samples were sent to the Crop Protection Lab in 2002 versus 418 in 2003. Hot-line calls were answered by SDEDA staff during the month of July to provide extra time for the summer lab technician to process samples.
- SE's communication plan involved a focus on bus advertising in Moose Jaw and Regina and billboards in various other Saskatchewan locations. A communications contract with the SDEDA paid for newspaper advertising and a similar contract with SOS Elms Coalition is helping to develop a television ad and reprint educational materials. SE also funded the research project at Simon Fraser University.



- The removal of infected elms and hazard elms in 2002 mainly took place under a contract with Schneider Brothers.
- Basal spraying took place in the buffer zones and in various cost-share communities that were involved in the provincial program.

Saskatchewan Insect and Disease Report - 2002

The eastern spruce budworm *Choristoneura fumiferana* (Clemens) is the most significant insect pest in Saskatchewan's Boreal Forest. Since 1981, 3.1 million ha have been severely defoliated. In 2002, over 800,000 hectares of moderate and severe defoliation were mapped. This figure is almost double previous years figures and suggests the outbreak in Saskatchewan is building not declining. In 2002, 40,074 ha of severely defoliated forest was treated with *Bacillus thuringiensis* var. *kurstaki* (Foray 76B).

Forest tent caterpillar *Malacosoma disstria* (Hübner) populations were low and no areas of severe defoliation were detected in the aerial surveys over the provincial forest.

Dutch elm disease (DED) *Ophiostoma novo-ulmi* Brasier continued to spread in the province, however, no new communities had infections

confirmed in 2002. In 2002, there were fewer trees removed. In total, 108 infected elms were removed in communities and a further 457 were removed in buffer zones for a grand total of 565.

Lodgepole pine dwarf mistletoe *Arceuthobium americanum* remains the most significant pest of Jack pine. Management, through silvicultural sanitation is ongoing. In 2002, drought

caused significant mortality in Jackpine plantations in the "Island" forests (Nisbet and Fort a la Corne forest) in the Aspen Parkland EcoRegion. In 2002, an area of 2,916.5 ha of Jackpine plantations have died as a result of drought.



Photo of adult Mountain pine beetle, courtesy Canadian Forest Service.

Concerns around the potential spread of the Mountain pine beetle *Dendroctonus ponderosae* (Hopkins), led to the province drafting a restriction order under the authority of *The Forest Resources Management Act* banning the import, transport or storage of any pine forest products with bark attached originating in British Columbia, Alberta, or the United States.

Other forest health issues of interest in the province include: Yellow-headed spruce sawfly *Pikonema alaskensis*, and the Larch bark beetle *Dendroctonus simplex*. In addition, the spruce weevil *Pissodes strobi* and Jack pine budworm *Choristoneura pinus pinus* are considered significant forest insect pests.

Rory McIntosh
Provincial Insect & Disease Specialist

Dutch Elm Disease in Manitoba - 2002

The annual Manitoba Conservation Dutch elm disease (DED) surveillance program ran for approximately four months during the summer of 2002. This program covers 38 communities and the buffer zone area surrounding the city of Winnipeg. Winnipeg itself is not included as it runs its own Dutch elm disease management program with the help of an annual grant from the Province. Communities participate in the program on the basis of cost sharing. Usually, the Province is responsible for the survey and removal of diseased and hazardous elm trees and the communities take care of control measures such as basal spraying with insecticide, pruning, and tree replacement.

Dutch elm disease now extends throughout the entire natural range of the American elm in Manitoba; spreading across southern and central regions of the province from the Manitoba-Ontario border into Saskatchewan and northward to the Saskatchewan River. River areas continue to have high levels of DED,

especially along the Red and Assiniboine. The Boyne River near Carman and the Souris River in southwestern Manitoba remain extensively infected. In the western and northwestern portions of the province the Swan, Red Deer, Carrot and Saskatchewan Rivers plus numerous smaller rivers are also heavily infested.

DED removal crews in Manitoba removed a total of 21,122 elm trees between April 1 2001 and March 31, 2002. Of this total, Provincial crews removed 14,313 elm trees; 6050 of which came out of the Winnipeg buffer zone and the remainder from the cost sharing communities. In addition, City of Winnipeg crews removed 6,454 elm trees, and the City of Brandon removed 355 trees.

DED survey crews marked 13,703 trees for removal in the province in 2002. Of this total, 4,956 elms were

marked by provincial DED surveyors within the Winnipeg buffer zone area and 3628 in cost-sharing communities. In addition, 223 firewood piles were identified by the provincial crews. Winnipeg survey crews marked 6,005 elms within the city, of which 5,498 were diagnosed as having DED and the remainder (507) classified as hazards. They also issued a total of 84 firewood notices. Other major urban centres with DED include Brandon, Morden, Neepawa, Portage la Prairie, Selkirk, Steinbach and Winkler.

The more aggressive smaller European elm bark beetle (*Scolytus multistriatus*) has been found in small numbers in the City of Winnipeg with three beetles being found in 1999 and two in 1995. Manitoba Conservation's pheromone traps captured two specimens of the beetle in rural Manitoba in 1989.

*Linda Christianson and Jon Leferink
Manitoba Conservation*

*DED survey crews marked
13,703 trees for removal in the
province in 2002.*

Join the SDEDA Today!

If you or your organization are interested in the management of DED please consider joining the SDEDA. Simply fill out and send in the form along with your payment of \$25 for a one year membership.

Date: _____

Contact: _____

Organization: _____

Street/Box #: _____

City/Province: _____

Postal Code: _____

Phone #: _____

Fax# _____

Email: _____


Membership Fee \$25
Donation _____
Total: _____

Send your cheque or money order to:

Saskatchewan Dutch Elm Disease Association
102—112 Research Drive
Saskatoon, Saskatchewan
S7K 2H6

“Preserving the American elm in Saskatchewan”

Charitable Registration Number:
87251 7594 RR001



Using Remote Sensing to Detect DED

The SDEDA recently received a bound copy of Taz Stuart's masters thesis titled, **Remote Sensing of Dutch Elm Disease using Landsat Thematic Mapper in Sherwood Forest Saskatchewan, Canada**. The following information summarizes his findings.

The purpose of my research was to accomplish the following five goals:

- to determine how DED appears in satellite imagery (i.e. its spectral signature in the 400 nanometre to 2,500 nanometre region of the electromagnetic spectrum);
- to determine whether Landsat Thematic Mapper is capable of displaying and detecting different levels of infection of DED;
- to determine if standard classification procedures can be used to classify DED;

- to determine if DED can be detected by other remote sensing procedures (such as spectral unmixing);
- and, to determine if DED can be monitored and mapped using Landsat TM imagery.

From the research process I concluded that DED is detectable using Landsat Thematic Mapper imagery when used with a remote sensing technique called spectral unmixing. The process provided a 97% positive DED detection rate after image correction. The method could not differentiate between DED and other wilt diseases such as Dothiorella or Verticillium as they appeared the same in the imagery.

This process provides a quick way of surveying areas for possible DED

infections on a regional basis. As new imagery is available every 16 days, all known elm areas in the province could be mapped and monitored at a reasonable cost and the probability of DED being quickly detected in new areas is highly likely. Crews could then focus their efforts on these areas thereby helping to reduce the spread rate.

I would like to once again thank the SDEDA for their support in this research effort to better manage DED and its spread. I believe this technology could improve monitoring efforts and control of DED. Future developments could provide valuable tools for the monitoring and detection of other forest maladies when the spectra for those problems are known.

*Taz Stuart
City of Regina*

Pruning Training

If you are in the Saskatoon area, don't miss the opportunity to take the **SIASST Tree Pruning Course**, one of the recognized training options for the soon-to-be required Saskatchewan elm pruner endorsement. The course will be offered **March 24-27, 2003 at the University of Saskatchewan**. The cost for the course will be \$325 and covers everything from tree identification to tree diseases. For more information, contact Sandra Shiels at 798-0456 or 1-800-667-7730.



New from the SDEDA

Due to the many inquiries we received at the SDEDA about the other insects and diseases of elms, we decided to create a fact sheet on this topic. **Fact Sheet #9** is now available through our office or by visiting our web site and printing off the information as listed under the "publications" section.

We are also in the process of printing our new school curriculum for grades 3 to 5 called **"There's a Fungus Among Us"**. We will be distributing it as a kit to schools through Saskatchewan Learning for spring of 2003. One of the mascots

used in the unit, "Dr. Elmwood", is shown on the right. The "kits" will include the printed curriculum, a "before and after" poster, an activity sheet and, as funding allows, a "Songs of the Trees" CD. Sponsors include:



- A.S.U.P.C.A.
- City of North Battleford
- ISA—Canadian Research Trust
- Saskatchewan Lotteries
- Saskatoon Rotary Club North
- SaskEnergy
- Society to Prevent DED

SASKATCHEWAN DUTCH ELM DISEASE ASSOCIATION

102 112 RESEARCH DRIVE
SASKATOON, SASKATCHEWAN
S7K 2H6

Telephone: (306) 933-5546 Fax: (306) 933-7930
Email: ggustafson@serm.gov.sk.ca
Website: www.sdeda.ca



President:
Ray Morgan (306) 953-4890

Executive Director:
Glenn Gustafson (306) 933-5546

Administrative Assistant:
Brenda Craig (306) 933-7203